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ABSTRACT

This document explains the reasoning behind the need for individualized instruction. After a brief description of the task of education and its philosophy, the paper goes on to define the educative process in terms of a number of dimensions and aspects: a) the substantive dimension, or actual curriculum design; b) the procedural dimension, or teaching methods that enhance learning; c) the environmental dimension; d) the physical aspects, or the dimensions of the plant itself; and e) the technological aspects, or the use of various media. Seven figures and a bibliography are included. (For related documents, see SP 006 948-952.) (JB)

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INDIVIDUALIZATION OF INSTRUCTION:

A RATIONALE

by

A.F. McLean and J.J. Hunt

Mr. McLean is a Research Assistant with the Division of Educational Research and Services at the University of Montana. He formerly was an Administrative Principal of a school district in Alberta, Canada, and is presently completing a doctorate in Education.

Dr. John Hunt is an Associate Professor of Education at the University of Montana and a Special Consultant to the Division of Educational Research and Services. Dr. Hunt is the co-author of the noted publication Rx for Team Teaching.

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TABLE OF CONTENTS

CHAPTER		PAGE
	FORWARD	i
I.	INNOVATION, DEVELOPMENT, AND CHANGE	1
II.	THE EDUCATIVE TASK	3
III.	A GUIDING PHILOSOPHY	5
IV.	THE EDUCATIVE PROCESS	8
	Substantive Dimension	10
	Procedural Dimension	11
	Environmental Dimension	13
	Vertical School Organization	13
	Horizontal School Organization	17
	Articulation	20
	Physical Aspects	22
	Technological Aspects	22
V.	SUMMATION	24
	BIBLIOGRAPHY	26

FOREWORD

You may have heard recently the phrase, "Now that we have achieved education for all, let us seek education for each." We certainly have nearly achieved education for all, and we have it within our power to achieve education for each, but to do so we must change markedly in the next decade and constantly examine new avenues which seem to offer realistic improvements for the teaching-learning process.

This monograph series is designed to set forth what is the most enlightened thought in the field. New ideas will be presented with the hope that some implementation will follow.

While we will not be advocating any one specific course or another, we believe it to be necessary to give currency to new and viable solutions to some of the problems that face us in today's complex world. Educators will not find specific recipes to educational problems in this brief paper, but it is hoped that they will find meaningful and useful ideas, directions, and procedures. From this point of view, practicing educators, and others, should find the information contained in the educational monographs of considerable value and assistance. How well we accomplish our purposes will eventually be for our children to witness or censure.

J. Francis Rummel
Dean, School of Education
University of Montana
Missoula, Montana

I. INNOVATION, DEVELOPMENT, AND CHANGE

In recent years society has produced many different forces which are exerting tremendous amounts of pressure upon the educational system. Increasingly, industry, business, enterprises, government, social agencies, service institutions and many other segments of modern society are placing increasing demands upon the educational institutions to supply individuals who are prepared to cope with the rigors, complexities and rapid changes, not just of life today, but for the world of tomorrow

But where does the professional educator of today stand? Is he merely perpetuating the old ways of the past or is he striving toward the future? Can he ask himself: "Am I actively engaged in attempting to strike out a new path, blaze a new trail? Or, am I merely a follower of the old established ruts of the past?" Historically, man has walked long, difficult, and inefficient trails because he knew no other way. Man lacked the experience, knowledge and technology to proceed in fresh directions and thus he took the established path Many knew that these ways were neither the shortest nor the best. However, in time, and with the combined effort of many trail blazers, man learned new ways and means of coping with the physical and mental obstacles that barred his way to further exploration and development These trail blazers become the innovators, and those exploring and testing the trails become the developers. Those who merely follow blindly along the beaten path are but the sheep of the times.

Today, more than ever, modern man can no longer seek the old rutted trail of the past but must surge ahead building new trails which have to provide greater speed and efficiency than ever before in history. Granted, there are those who may still prefer to travel on foot or by horse and cart, but society at large has chosen to travel by jet and professional educators must also journey in a modern vehicle or fall hopelessly behind It is not that the old ways were wrong or bad, it is just that they are presently out of step with the times Many of our present educational practices were derived out of an era that necessitated providing a very basic and simple education as quickly as possible to a large, rapidly growing and relatively uneducated population by means of generally inadequately prepared teachers, often working under quite primitive instructional conditions. Many educational procedures were thus developed to accommodate specific conditions during the period of early growth and expansion and were doubtlessly useful. However, the space age required major revisions in the educational thinking of the times. It is no longer sufficient for educators to think in terms of being a person of the present, for that is already history. It is now necessary to become an educator for tomorrow, a man of the future. Each educator must use his own expertise as a professional and strike out to explore the many new trails that recently have been blazed or to determine and investigate for himself some new and promising path.

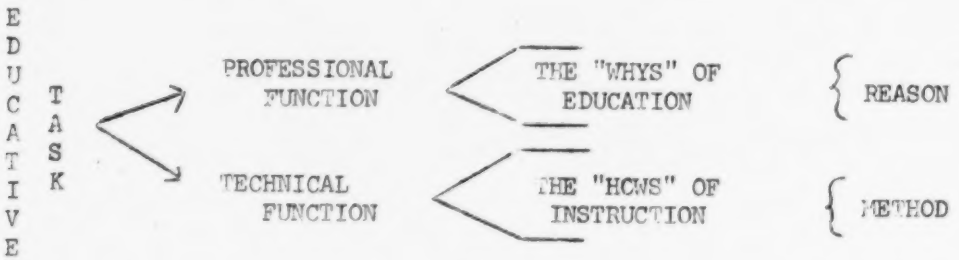
Never before in the history of education has the need for innovation, development, and change on such a large scale been so pressing Previously, it was thought that a few innovative administrators and school trustees could effect the necessary changes that would bring the educational system into focus with the rest of a very rapidly changing society. However, this is not proving to be the case. We now have more and better resources and facilities at our command than ever before and still the educational institutions tend to change relatively little from the basic concepts and methods established over one hundred years ago. Perhaps the public has a right to ask· "What is wrong?" "Are we not spending more on education than ever before?" "Where are the results of our efforts?" These and other legitimate questions deserve treatment on the part of the professional educator.

II THE EDUCATIVE TASK

Although there are many and varied definitions and conceptions as to what professionalism actually involves, this article is concerned only with defining the professional task of teachers in terms of their role. For this purpose teachers need to ask some basic questions. "Have I carefully studied the particular program that I am teaching?" "Have I established reasons for using particular methods and materials for various parts of the program at a particular time?" In other words,"Do I know the reasons behind what I am doing--do I know the principles (the WHYS?) underlying all of the procedures (the HOWS) of a particular course of study, program, method, organizational

structure, or any other facet of the educational process that I am involved in?"

In many instances teachers often mistake the "technical" or "how" functions of instructions for the "professional" or "why" function. These two aspects of the educative process can be further illustrated as a hierarchial concept based on the degree of knowledge necessary to carry out the educative task.



Within this context the professional teacher is expected to carry out the professional function and through the use of knowledge, experience and reason determine the basis for instructional decisions. This task is the important and primary function of the professional teacher; the technical function is only secondary. Teachers must realize that any well trained technician could carry out the routine work of instruction (particularly if based on the lecture method) without ever really knowing the theoretical aspects of the skill upon which he was working. One need only look to the armed forces training program to see many excellent instructors at work. However, the drill sergeant only needs to know what procedures he must follow so that the trainee will perform in the desired manner. His task is basically the

"how" function. It is up to others, the professionals, to determine the "why" function.

In a similar fashion this same concept applies directly in the field of public education. Therefore, it might be surmised that teachers need to throw off the shackles of nebulous busy work and engage in professional exploration and development. There are still far too many teachers who attempt to hide behind the psuedo protective wall of the technical aspects of teaching and thus seek a false security.

Recently, however, there has been an extremely gratifying trend in the increasing numbers of professional teachers of all ages emerging to express their desire for new and exciting means of improving instruction. From all sides demands are being made to supply information on recent educational innovations, changes, and developments.

In the following sections of this paper a rationale for individualization of instruction is proposed and developed. This aspect of education was chosen since it is one of the foremost areas of discussion and least applied concepts in education today. Following and emitting from the rationale, a conceptual design is proposed. This construct involves the use and integration of the concepts of flexible scheduling, continuous progress, and team teaching.

III. A GUIDING PHILOSOPHY

In the process of developing any fundamental guiding philosophical base for a program of individualized instruction, two major questions must be considered:

1. Does the program meet the needs of all of the students as unique individuals?
2. Does the program meet the needs of the society in which the school exists and serves?

In determining the philosophy that a particular school might follow, there are again two basic elements: the values of the immediate surrounding social invironment and the values of the greater cultural milieu. From an analysis of the basic values of a societial group, it is possible to determine an acceptable and desirable philosophical base from which to derive overall aims, objectives, and goals of an educational program.

It is the authors' contention that the type of philosophical base that best fits the modern concept of democratic society in a highly scientific and technological age is that of individualization of the educational process. This concept is illustrated by one school staff who, in attempting to cope with changes in modern society and to deal with the need for a change in their local educational program, expressed their philosophy as follows:

> A type of school organization is desired that is based on the idea of continuous pupil progress, which promotes flexibility in grouping by removing grade levels, which is intended to lessen, or even eliminate, the problem of retention and acceleration which is designed to facilitate the teacher's role in providing for pupils' individual differences, and which will facilitate the learning process for the individual student to the greatest degree possible.[1]

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[1] A. F. McLean, A Program of Continuous Pupil Progress In The Exshaw Elementary School, Exshaw, Alberta, Canada, (unpublished Master's thesis, University of Montana, Missoula, Montana, 1969), pp. 28-29.

This entire concept of attempting to attain the goal of individual fulfillment presents a tremendous responsibility that falls upon teachers both individually and collectively in their effort to derive means of achieving this goal. Pertaining to this ideal John Gardner states that:

> We should very greatly enlarge our ways of thinking about education. We should be painting a vastly greater mural on a vastly more spacious wall. What we are trying to do is nothing less than to build a greater and more creative civilization. We propose that people accept as a universal task the fostering of individual development within a framework of national and moral values. We propose that they accept as an all-encompassing goal the furtherance of individual growth and learning at every age, in every significant situation, in every conceivable way. By doing so, we shall keep faith with our ideal of individual fulfillment and at the same time insure continued strength and creativity as a society.[2]

One major task of the school certainly is to instill the individual with a sense of dignity to recognize his potentialities, to release his creative power, and to stimulate his initiative. Public education, based on the philosophy that every child has a right to be helped to achieve his potentialities to the maximum, is on the right track, but there must be a firm commitment to enact this philosophy. It is not enough to expound the ideal it must be formulated in action. Such a design is presented in Deciding What to Teach:

> The instructional program should provide (a) opportunities for developing the individual potentialities represented in the wide range of differences among people (b) a common

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[2]John W. Gardner, Excellence (New York: Harper and Brothers, 1961), pp. 142-143.

> fund of knowledge, values, and skills vital to the welfare of the individual.
>
> To achieve these objectives, the instructional program cannot be the same for all. Provisions for individual differences should be made by qualified teaching personnel through diagnosis of learning needs and through appropriate variety of content, resources for learning, and instructional methods.[3]

This concept is further developed on a much more elaborate and concrete basis in Planning and Organizing for Teaching. In this publication, nine recommendations concerning school organization are presented, including such factors as: multigrading, nongrading, grading, ability grouping, team teaching, self-contained classrooms, classroom grouping, instructional materials centers, educational television and radio, programmed instruction, and instructional media.[4] Many of these areas of consideration as well as supportive basic conceptual designs will be dealt with in the following sections.

IV. THE EDUCATIVE PROCESS

A consideration of the techniques and strategies involved in a program of individualization of instruction may be presented through a discussion of some of the factors involved in the educative process. For this purpose a conceptual model, developed by Downey,[5] will be presented in an attempt to illustrate the process of education and this

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[3]National Education Association, Deciding What to Teach (Washington D.C.: National Education Association, 1963), p. 78.

[4]National Education Association, Planning and Organizing for Teaching (Washington D.C.: National Education Association, 1963), p. 190.

[5]L.W. Downey, "Direction Amid Change," Phi Delta Kappan XLII No. 5 (February, 1961) pp. 186-191.

schema will be used as a central point in the development of the discussion.

Before beginning a discussion of the model, it should be said that the model is in no way meant to be all-inclusive of the educative process; but it does indicate several rather general domains from which educators can work. Within the model (Figure 1) each of the three major domains are divided into their basic functional attributes, which in turn are involved in the outcomes of the process.

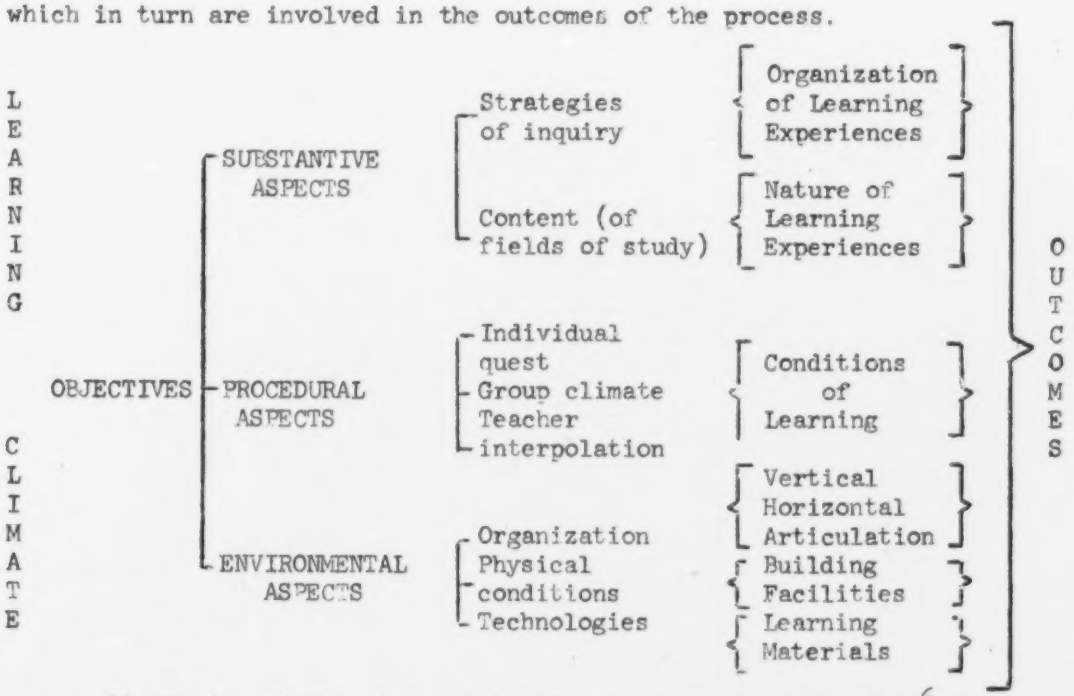

Figure 1. The Process of Education: a conceptual model.[6]

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[6]Model derived from work done by W.H. Worth and L.W. Downey, "Current Trends in Curriculum," (Presented to the C.E.A. Short Course, Banff, Alberta, 1965) and, W.D. Knill, "Planning and Organizing for Instruction" Program and Personnel, the 1965 Alberta Principals' Leadership Course (Edmonton, Alberta: 1965) pp. 15-20.

SUBSTANTIVE

The substantive, substance, or actual curriculum design involves the kinds of things students are required to learn (content) and the corresponding mental actions demanded in the process (strategies of inquiry). These concepts include all areas of scope, sequence, and articulation in curriculum study and are concerned with such factors as sequential programs;[7] core, activity, and subject curricula;[8] analytic, inductive, and intuitive thinking[9] and such areas as flat, longitudinal, and spiral curriculum building.[10]

Knill describes the strategies of inquiry in terms of the organization of learning experiences and content in terms of the nature of learning experiences.[11] In addition, he further defines the organization of learning experiences in seven sub-categories: continuity, integration, capacity, level of challenge, maturity, flexibility, and economy. These elements are defined as follows:[12]

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[7]Jerome S. Bruner, The Process of Education (New York: Random House, 1960), p. 82.

[8]B. Othanel Smith, W.O. Stanley, and J.H. Shores, Fundamentals of Curriculum Development (New York: Harcourt, Brace, and World, 1957) pp. 225-228.

[9]J.S. Bruner, op. cit., p. 59.

[10]W.W. Worth, "Major Trends in the Elementary School Curriculum," The Principal and Program Development, the 1964 Alberta Principals' Leadership Course (Edmonton, Alberta: Policy Committee, Leadership Course for School Principals, Department of Educational Administration, University of Alberta, 1964), pp. 9-19.

[11]W.D. Knill, op. cit., p. 18.

[12]Loc. cit.

(1) Continuity: the sequence of learning experiences throughout the educational life of the individual and how a continuous experience cuts across such superimposed divisions and categories as age, grade and school.

(2) Integration: the commonality of all knowledge in spite of arbitrary subject area barriers, and the attempt to integrate and synthesize subjects for maximum reinforcement and balance.

(3) Capacity, level of challenge and maturity: the assessment of quantity, quality, and rate of learning in relation to ability of the learner to be challenged and to be successful.

(4) Flexibility and economy: the manner of pupil organization (large group, small group instruction, individual study) as it relates to the curriculum and the principle of economy and efficiency.

Knill then discusses the nature of learning experiences in five subdivisions.[13]

(1) Structural relationships: this refers to the organization and structure of disciplines and their relationship to each other with an attempt to relate content, concepts and application within a curriculum.

(2) Meaningfulness: to make the learning experiences meaningful to the learner in terms of understanding and bringing order out of the world around him as he perceives it.

(3) Flexibility, variability and scope: refers to the nature of the curriculum for the individual. His experiences must be ordered about his center of interest and his capacities, but they must still cover broad fields or a wide range of subjects.

PROCEDURAL

The procedural domain involves three major divisions and is highly concerned with the pupil-teacher and the pupil-pupil process. Throughout these areas, the teacher attempts to use methods that will enhance the laarning process and facilitate pupil acquisition, transformation, and

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[13]Loc. Cit.

evaluation.[14] The teacher attempts to extend the learners' range of experiences by using devices that will aid understanding of structure, extension of range of experience and dramatization of the significance of learning.[15] Many methods and techniques are involved in this process as exemplified by the lecture method, independent study projects, seminars, workshops, and small group instruction.

Within this area, which Knill calls the behavioral aspects, the conditions of learning may be subdivided into a number of components: motivation, reward and punishment, transfer of training, recall, problem solving, concrete and abstract learning, evaluation and diagnosis, and societal and cultural forces.

(1) Motivation: the essential base for all learning.

(2) Reward and its converse, punishment: have a direct effect upon learning--a factor well established by research.

(3) Transfer of training and recall: these two concepts have been investigated and found to have measurable relationships with other conditions of learning.

(4) Problem solving, concrete and abstract learning: these also are of prime concern to the curriculum maker and several principles have been established regarding the development of problem solving ability, the optimum time for concrete learning and the teaching of abstraction.

(5) Evaluation and diagnosis: these procedures with appropriate instruments are essential at certain check points of the educative process with provisions for adequate follow-up programs.

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[14] J. S. Bruner, op. cit., p. 48

[15] Ibid. p. 84

(6) Societal and cultural forces as significant factors in the process of learning are coming under more intensive study than ever before. Their importance in the total scheme of instruction will doubtlessly grow as research continues to produce new findings.[16]

ENVIRONMENT

The third major domain, the environmental, includes all of the mechanical and physical features involved in the process. The only purpose here, as in the other domains, is to facilitate the educative process for the learner.

Organizational Aspects. Within the organizational aspect of this domain there are three major dimensions to be considered. They are: (1) the vertical dimension, (2) the horizontal dimension, and (3) articulation.[17] Figure 2 illustrates schematically the interrelationship of the three dimensions.

1. Vertical School Organization. This dimension involves the organizational structure designed for moving a student upward (vertically) from entry into the school system through the various levels or steps to completion of the program (e.g. from grades one through twelve). It involves three main areas of consideration.

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[16] W. D. Knill, Op. cit., p. 18.

[17] These concepts are based on the discussion of the dimensions of school organization developed by John Goodlad in the N. E. A. publication, Planning and Organizing for Teaching. The conceptual models of articulation, vertical, and horizontal dimensions of school organization were developed from these concepts. Ideas for the use of schematic designs in relation to these concepts were developed separately by E. Miklas, University of Alberta, and J. Hunt, University of Montana.

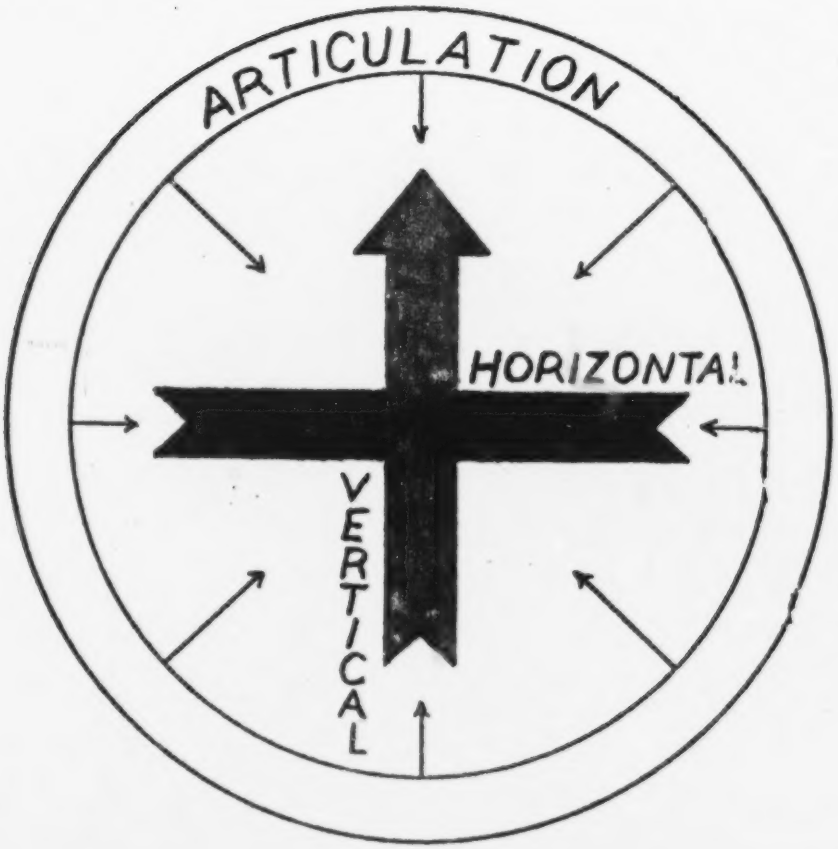

Figure 2. School Organization: a conceptual model.[18]

a. The content of the curriculum and whether it is to be variable or constant in nature.

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[18]A.F. McLean, A Program of Continuous Pupil Progress In The Exshaw Elementary School, Exshaw, Alberta, Canada., op. cit., p. 35.

b. The rate by which a student is able to progress in all aspects of his endeavor and whether this factor is held to be variable or constant.

c. The number of placement decisions that are made during the students progression--whether there are few, many, or an unlimited number of these decisions.

This process might be conceptualized in terms of this upward movement as depicted in Figure 3.

To illustrate this point on a three dimensional plane, a structure may exist which is designed to be of constant curriculum content, a designated constant rate of progress and few placement decisions. These organizational features, in this combination would be illustrative of the traditional graded program. On the other hand, if the curriculum content and the rate of progress were both variable and if the placement decisions were unlimited in number, this would be characteristic of a completely individualized program. There are, of course, many such possibilities involved in perfecting organizational structures through the use of conceptual design. Figure 4 represents several possibilities.

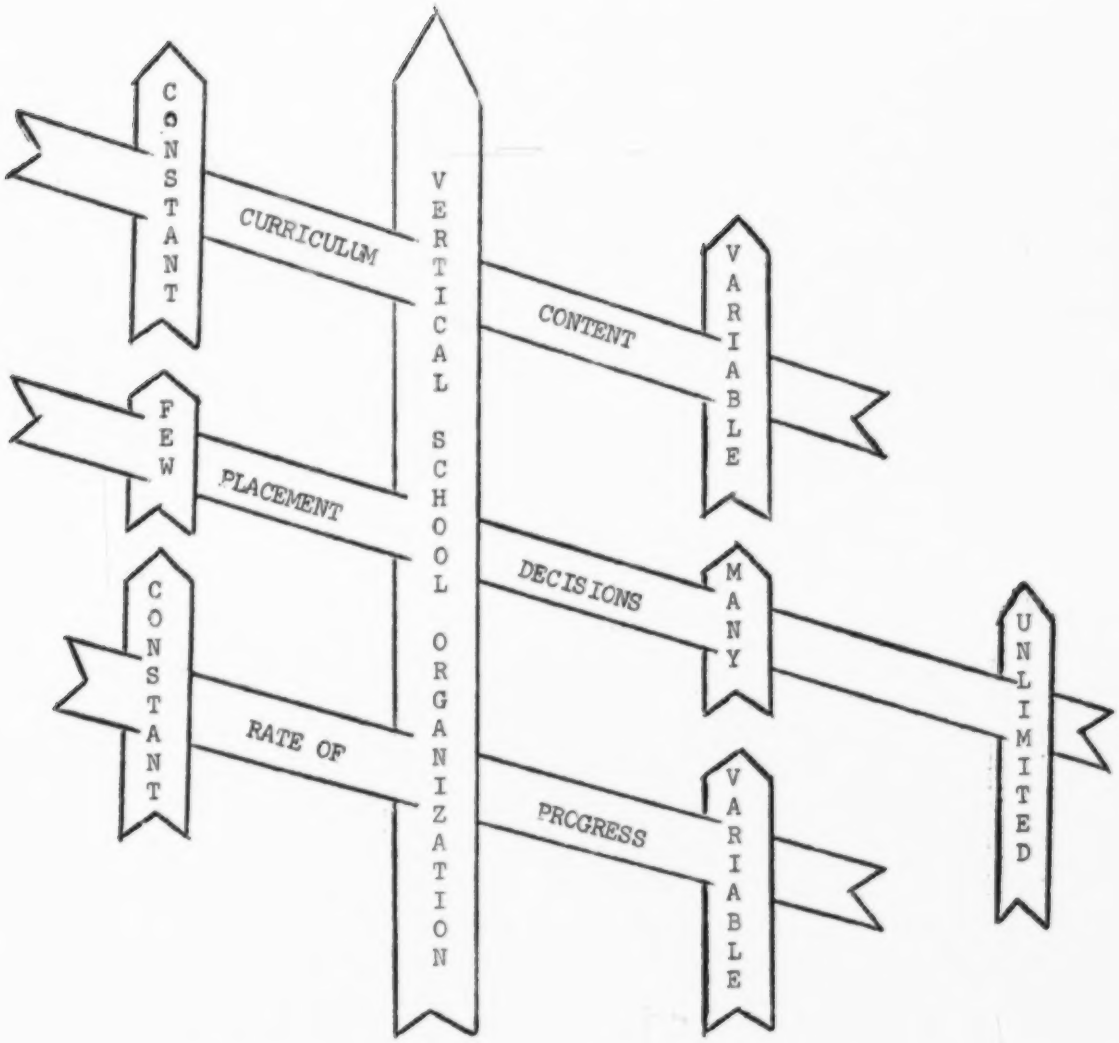

Figure 3. Vertical Organization of Program Development

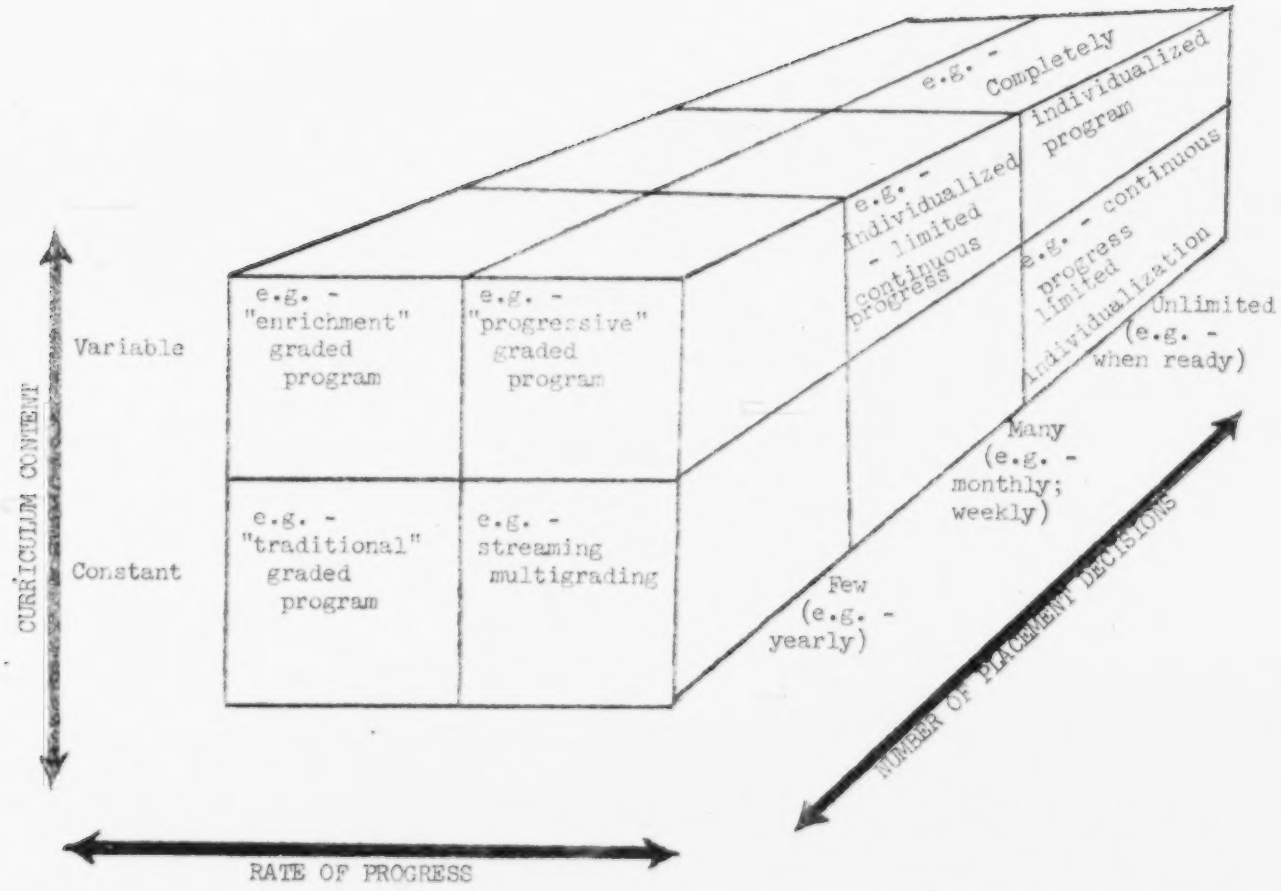
e.g. - Completely individualized program
e.g. - Individualized - limited continuous progress
e.g. - continuous progress limited Individualization
Unlimited (e.g. - when ready)
e.g. - "enrichment" graded program
e.g. - "progressive" graded program
e.g. - "traditional" graded program
e.g. - streaming multigrading
Variable
Constant
CURRICULUM CONTENT
Few (e.g. - yearly)
Many (e.g. - monthly; weekly)
NUMBER OF PLACEMENT DECISIONS
RATE OF PROGRESS

Figure 4. Vertical Organization: a conceptual model.

2. Horizontal School Organization. This aspect of school organization deals with the position of a particular individual student or group of students at any given time in the organizational structure. It mainly concerns the facticity of dividing students into groups, assigning them to teachers, and providing a program of studies. This type of structure involves three major dimensions: (1) teachers, (2) students, and (3) curriculum; depicted schematically in Figure 5. Such an organizational structure exists throughout the extent of the vertical dimension.

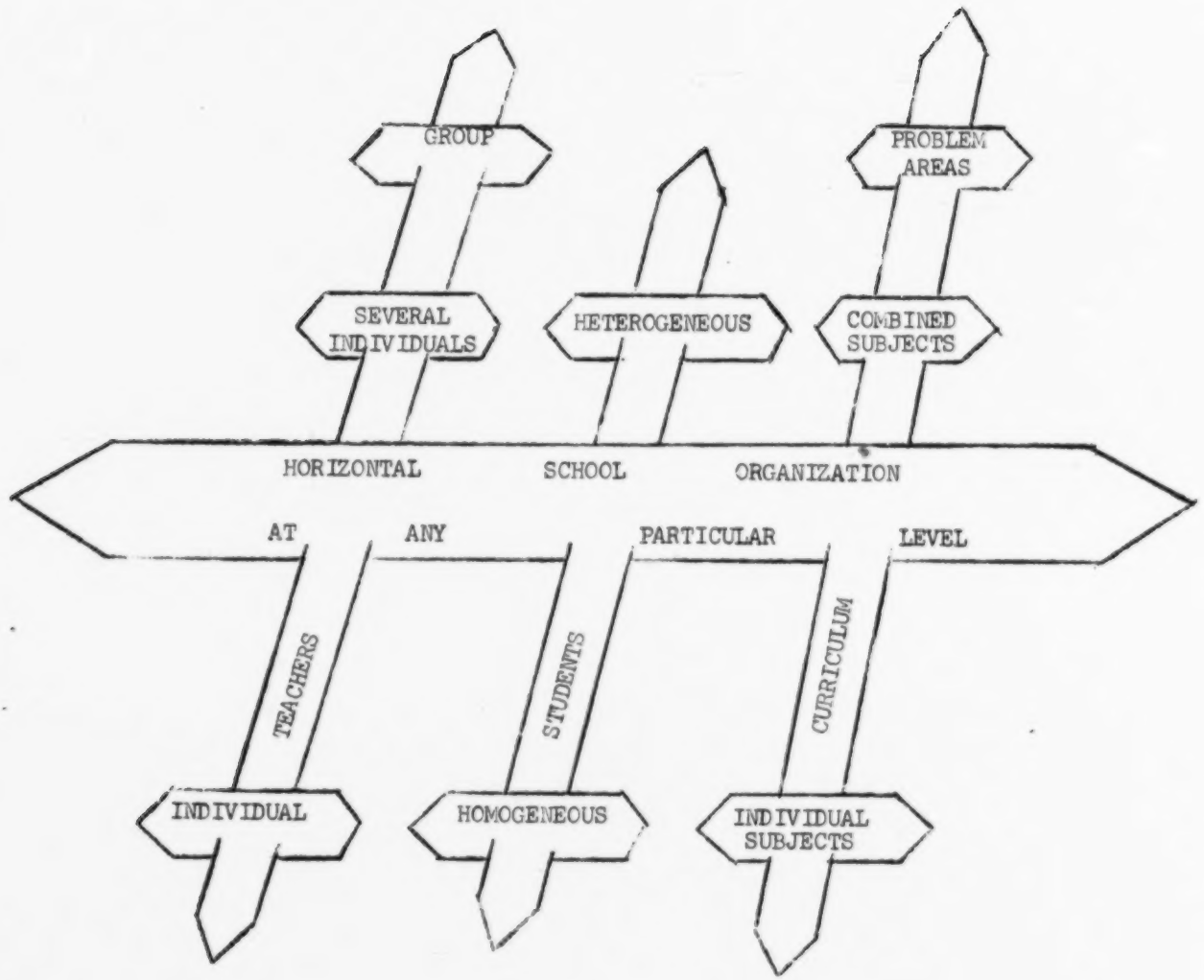

Figure 5. Horizontal Organization of Program Development

Teaching personnel may be grouped in various ways; however, the most common involve teaching by an individual such as in the self-contained classroom; by several individuals, such as in a departmentalized system; or in a group, as in team or cooperative teaching. The students are usually grouped either homogeneously or hetrogeneously and are usually regrouped within these broad areas on the basis of large group,

small group, or individual instruction. The curriculum is usually considered from either a combination of, or one of three areas. These would involve individual subject areas such as "reading," geometry," or "chemistry," combined subject areas such as "language arts," "social studies," or "mathematics," or large problem areas such as "our community," or "man and his world."

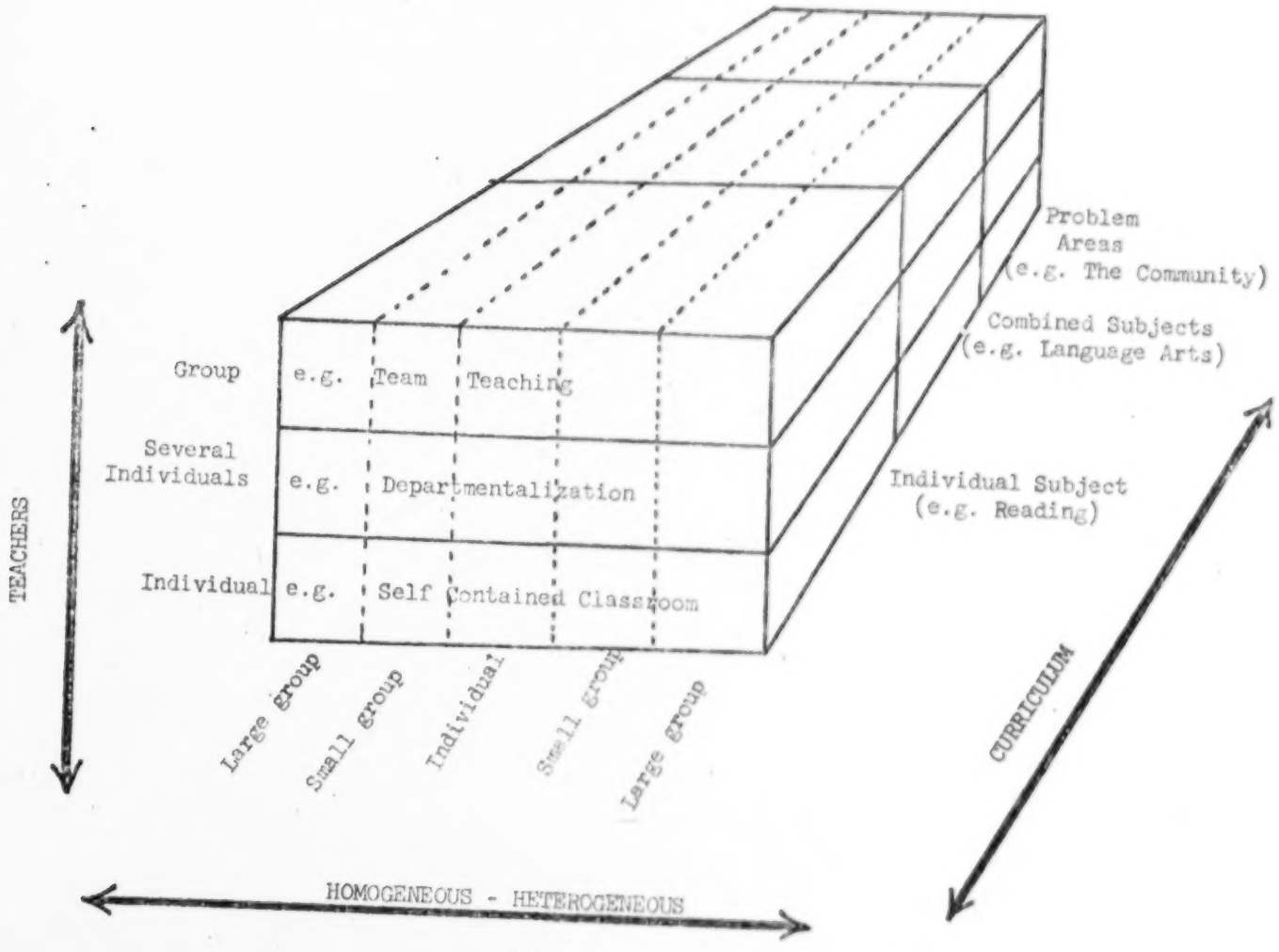

Figure 6. Horizontal school organization: a conceptual model.

All three of the major dimensions are, or can be, interrelated and the total possibilities under this aspect of organization are many and varied. Figure 6 illustrates some of the possibilities that should be investigated when seeking a particular horizontal type of organization for a unique school situation.[19]

To illustrate further, a more integrated situation, the middle school organization, is presented as an example (Figure 7) so that the major dimensions may be viewed in a more direct relationship. In this illustration, the middle school is depicted as a separate entity, bridging the expanse between elementary and high school education.

3. Articulation. Articulation runs throughout both the horizontal and vertical aspects as well as between all features of the two dimensions. This aspect of organizational structure must be embedded in the very fiber of the program for there is nothing so devastating to the educative process as a poorly constructed and disjointed organizational pattern. In the final analysis, the only justification for the existance of any particular organizational or curriculum pattern is in the degree to which it facilitates and enhances the educative process for the individual student. An example of one of the prime aspects of the articulation function is flexibility.

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[19]Administrative development of these concepts can be seen in E. Miklos "Organizing For Instruction As Program Development", The Principal and Program Development, The 1964 Alberta Principals' Leadership Course (Edmonton, Alberta, Canada, The Policy Committee, Leadership Course for School Principals 1964), pp. 35-45.

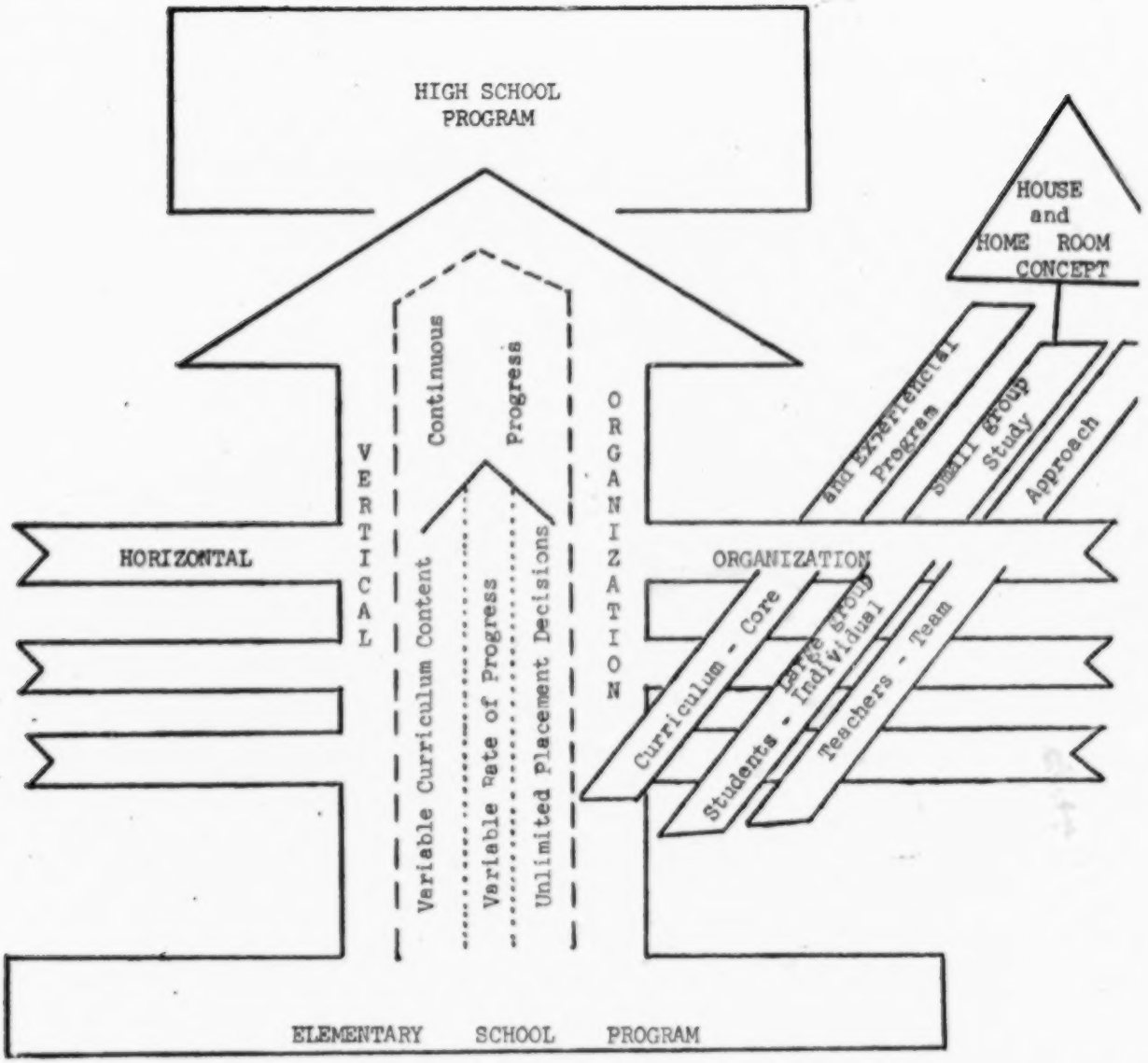

Figure 7. Vertical and Horizontal Dimensions of The Middle School.

Physical Aspects. The second area of the environmental domain involves the physical conditions that are involved in the educative process. This is mainly the area of the school facility and concerns factors of change and progress involving school plant facilities, school leadership, school personnel, and the school community. As a guide to action, McClurkin suggests four steps toward obtaining an adequate school plant: (1) long-range community planning, (2) educational planning for the particular school center, (3) architectural planning, and (4) the actual construction.[20] Perhaps one additional step should be included as a catalyst to the process--that is, the active involvement and participation of those people who will be affected by the program.

It is essential that the keynote in school facilities be flexibility. Johnson and Hunt emphasize this point in Rx for Team Teaching.

> The building design must include provisions for changeable, flexible, and usable space which must be adapted to the teaching needs at any particular time and in relation to any requirement that improved learning opportunity places on the teacher...[21]

Technological Aspects. The third area of the environmental domain involves the technologies used in enhancing and enriching the educative process. Bruner refers to modern technology in relation to the function

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[20] W.D. McClurkin, School Building Planning (New York: MacMillan, 1964), p. vi.

[21] Robert H. Johnson and John J. Hunt, Rx for Team Teaching, (Minneapolis, Minnesota: Burgess Publishing Company, 1968), p. 146.

by which they assiste the educative process and classifies these devices into three categories:[22]

1. Model devices (e.g., Cuisenaire rods)
2. Dramatizing devices (e.g., films)
3. Automatizing devices (e.g., teaching machines).

In Bruner's estimation, these devices aid the teacher in helping the student: (1) through the understanding of structure, (2) by extending his range of experiences, and (3) by dramatizing the significance of what he is learning.[23] However, one point is paramount, that is "the devices themselves cannot dictate their purpose" and thus it is the "teacher who constitutes the principal aid in the teaching process."[24]

From this, it can be surmised that the technology is only as useful a tool as the operator makes it. If the teacher does not adapt to new situations and the use of new techniques, then the technological facilities that are supplied will go unused. However, if the teacher is a true educator, continually seeking new and varied means of demonstrating, illustrating, and emphasizing, then the technological facilities will be used to greatly enhance the educative process.

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[22]J.S. Bruner, op. cit., pp. 82-83.

[23]Ibid., p. 84.

[24]Ibid., p. 88.

V. SUMMATION

It may be of some advantage to relate the theoretical design presented in this paper to the concrete reality of the practicing school situation. Viewed through the concept of the educative process, three dimensional aspects of school structure were discussed and certain alternatives presented. The multi-dimensional design presented the concepts of vertical, horizontal, and articulative aspects of school organizational structure as they pertain to the various elements of the educative process.

In future monographs each of the dimensions will be viewed in terms of a practical operational technique. For example, the vertical dimension will be described through the use of continuous progress concepts; the horizontal dimension through the use of team teaching techniques and variations in grouping and curriculum procedures; and the articulative dimension through the description of flexible scheduling and flexible programming procedures and techniques.

The rationale presented is not to be viewed only as a theoretical configuration merely standing by itself, but as a dynamic plan for action. This practical use of conceptual designs in terms of practice has been well stated by John Dewey who maintained that:

> theory is in the end...the most practical of all things, because the widening of the range of attention beyond nearby purposes and design eventually results in the creation of wider and farther reaching purposes and enables us to make use of much wider and deeper range of conditions and means than were expressed in the observation of primitive practical purposes.[25]

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[25]John Dewey, Sources of a Science of Education, (New York: Liveright, 1929), p. 17.

Other noted authorities agree and emphasize the same major theme. that good theory is good practice and vice versa. Guthrie points out that "theories are the basis of working practice;"[26] Coladarci and Getzels state that "a theory attempts to maximize practical predictions and practical understanding;"[27] "the theory and practice functions can be seen as necessarily interrelated aspects of professional behavior;"[28] and "theorizing and practicing can and do co-exist. Each is an aspect of the process of inquiry, and intelligently pursued, each constantly redefines the other."[29]

In the final analysis then, it is how the conceptual design is used in the test of experience that is significant: the enactment of theory into practice.

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[26]E.R. Guthrie, "Psychological Facts and Psychological Theory," Psychological Bulletin, 1946, 43, 1-20, pp. 3-4.

[27]A.P. Coladarci and J.W. Getzels, "Theory-Practice Relationship," in Educational Administration, G.W. Hack, et. al: (editors) (Boston: Allyn and Bacon, 1965), p. 59.

[28]Ibid, p. 61.

[29]Loc. cit.

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